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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/909,487 | 07/20/2001 | Willard K. McClintock | 26608-1 | 2572 |

7590 05/16/2003

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| EXAMINER |
|---|
| ANDREWS, MELVYN J |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1742 | 21 |

DATE MAILED: 05/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/909,487 | MCCLINTOCK ET AL. | |
| | Examiner | Art Unit | |
| | Melvyn J. Andrews | 1742 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *21 February 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-20,22-27 and 30-32* is/are pending in the application.

4a) Of the above claim(s) *8-20,22-27 and 30-32* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-20,22-27 and 30-32* are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

## DETAILED ACTION

### *Election/Restrictions*

Newly submitted claims directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: set forth below.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 8 to 20, 22 to 27, 30, 31 and 32 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1 to 7, drawn to a steel processing material, classified in class 75, subclass 320.

II. Claims 8 to 20 and 22 to 25, drawn to a method, classified in class 75, subclass 10.61.

III. Claims 26, 27, 30, 31 and 32, drawn to a steel processing material for addition into a heat of steel in an electric arc furnace, classified in class 75, subclass 306.

Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the product of

Group I can be used in a materially different process of using that product, for example as an addition into a heat of steel in a steel making furnace which is not an electric arc furnace.

Inventions III and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the product as claimed can be used in a materially different process of using that product, for example an electric arc steel making process wherein any exhaust dust is not recycled.

Inventions I and III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions The product of Group I may used as an addition into a heat of steel in a steel making furnace which is not an electric arc furnace and the product of Group III may be used in an electric arc steel making process wherein any exhaust dust is not recycled.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1 to 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Calderon et al (US 6,214,085) in view of Lehner et al (US 5,853,453) Calderon discloses a method for direct steelmaking including the step of pneumatically injecting a fluxed iron/carbon product with immediate foaming of the slag (col. 8, lines 28 to 33) the iron/carbon product having been made by mixing iron ore concentrate, coal and dolomitic limestone (col.7, line 37 to col.8, line 2 ) a materials feeding system feeds materials into hopper 14 these materials comprise iron ore such as iron ore concentrate and other iron bearing materials such as effluent dust and scale, these materials may also be dried prior to delivery to hopper 14 (col. 3, lines 44 to 59) which results in a steel processing material as in Claim 1.

With respect to Claim 2 Calderon does not explicitly disclose the concentrations of the coal and flux, such as dolomite in the fluxed iron/carbon product which is pneumatically injected into the furnace with immediate foaming but it would be obvious to modify the composition in order to achieve immediate foaming within the furnace which may be determined by routine experimentation since Clalderon recognizes concentrations to be a result-effective variable . In re Boesch 205 USPQ 215.

With respect to Claims 3 and 7 Calderon does not explicitly disclose the concentration of the iron bearing materials such as "effluent dust" but it would be

obvious to determine the optimum concentration as a source of iron suitable for recycling by routine experimentation since Clalderon recognizes concentrations to be a result-effective variable . In re Boesch 205 USPQ 215.

With respect to Claims 4, Calderon et al does not disclose the water content of the mix but Lehner et al discloses dehydrated granules formed from sludge may advantageously contain a residual moisture of a maximum of 5 wt. % free water to be used in a converter so that it would have been obvious to one of ordinary skill in the art at the time the invention was made to form a material with a low amount of water in order to provide sufficiently high strength particle for use in a converter since Lehner et al recognizes that moisturecontent is a result effective variable. In re Boesch 205 USPQ 215.

With respect to Claims 5 and 6 the Calderon mixture is pneumatically injected so that the Calderon mixture would be expected to be of an injectable size which may be determined by routine experimentation since Calderon recognizes that the size of the mixture must be suitable for injection or a result-effective variable In re Boesch 205 USPQ 215.

With respect to Claim 7 the concentration of the iron in the Calderon "effluent dust" would be expected to be similar to any iron-bearing material from the exhaust of a steel making furnace since the Calderon "effluent dust " contains an iron concentration suitable for recycling which is recognized by Calderon to be a result effective variable In re Boesch 205 USPQ 215

***Response to Arguments***

Applicant's arguments filed February 21, 2003 have been fully considered but they are not persuasive. Applicants argument that the claimed PCM is described in the specification on page 1, lines 12 to 13 is not well taken because the specification also describes on page 5, lines 16 to 19 that "the term "post combustion material" as used in this invention should be understood to cover any iron-bearing material from the exhaust of a steel making furnace ". The PCM of Claim 1 is not limited to material from a drop out box as argued. It is noted that no evidence has been provided that EPA acknowledges drop out box materials as a term of art. The examiner does not agree that the term "drop out box materials " is limited to a specific size, concentration or moisture content and does not categorically differ from Calderon "effluent dust".

With respect to Lehner applicants arguments are not persuasive of error because Lehner discloses working up any iron-containing dust residual substances collected using a wet process to form sludges which are dehydrated in order to form granulates which are recycled to a steel production process the motivation to combine Lehner with Caldreon is optimize the moisture content of the Calderon mixture to pneumatically fed into the furnace. Applicants motivations listed in paper no.10, page 13 have been noted but none of these reasons are claimed. With respect to the size of the mixture Calderon discloses that the mixture is pneumatically injected so that the determination of size would be well within the skill of the art since size would be a result effective variable.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sims et al (US 5,496,392) discloses industrial waste materials such as K061 (see Table 1) and Wunsche (US 6,024,912) discloses a preheating apparatus including a solid particulate drop out box for sedimentation of heavier dust particles (col.18, lines 20 to 23) but neither Sims et al nor Wunsche confirm that the EPA acknowledges "drop out box material" that the expression "drop out box material" has an explicit meaning with respect to the composition of the material recovered as argued on page 11 of Paper No.10..

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melvyn J. Andrews whose telephone number is 703-308-3739. The examiner can normally be reached on 8:00A.M. to 4:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V King can be reached on 703-308-1146. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.

Melvyn Andrews

MELVYN ANDREWS
PRIMARY EXAMINER

mja
May 14, 2003